

CLAIMS

1. A method for the decontamination of oily cuttings, coming from the drilling of oil wells, and the contemporaneous recovery of the oily component, comprising
5 the following steps:
 - a. mixing of said cuttings with CO₂ in the liquid state at a pressure value ranging from 45 to 80 bar and a temperature corresponding to the saturation value, with dissolution of the oily fraction of the cutting;
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 - b. removal of the liquid phase (solution) from the solid phase (cutting);
 - c. expansion and heating of the solution leaving step (b), with the recovery of the oily fraction discharged, and CO₂ in vapour phase;
15
 - d. cooling and condensation of the process CO₂ and its recycling to step (a), after possible undercooling.
2. The method according to claim 1, wherein the mixing of
20 the cuttings takes place at a pressure ranging from 45 to 70 bar, whereas the separation of the oily fraction is effected at a pressure ranging from 30 to 60 bar.
3. The method according to claims 1 and 2, wherein the mixing step of the cuttings and the separation step of
25 the oily fraction take place at a temperature close to

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the saturation value of the liquid phase.

4. The method according to any of the claims from 1 to 3, wherein the under-cooling degree of the liquid CO₂ ranges from 0 to 5°C.

5 5. The method according to any of the claims from 1 to 4, wherein the liquid CO₂ is fed to the extraction vessel in a ratio from 2 to 20 times by weight with respect to the cuttings.

6. The method according to any of the claims from 1 to 5, 10 wherein the moving of the liquid CO₂ is effected using a volumetric pump situated between the accumulation tank and the extractor.

7. The method according to any of the previous claims, wherein the oily phase extracted is separated by the 15 use of one or more separators on line.

8. The method according to claim 7, wherein the separation section consists of a single separator with a cyclone effect.

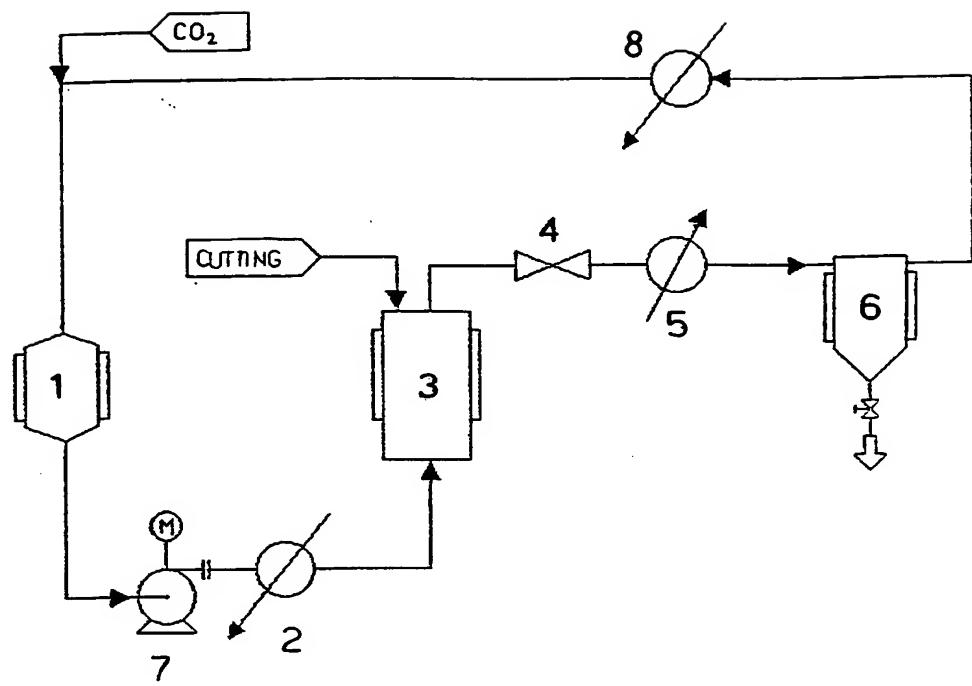
9. The method according to claim 7, wherein the separation 20 section consists of two separators, the first with inertial impact, the second with a cyclone effect.

10. The method according to claims 7-9, wherein a filter for separating the entrained liquid, is situated downstream of the separation section. 25

METHOD FOR THE REMOVAL AND RECOVERY OF THE OILY COMPONENT
FROM DRILL CUTTINGS WITH LIQUID CO₂

Abstract

10 Method for the removal and recovery of the oily component
from cuttings coming from the drilling of oil wells by
treatment of the cuttings with a solvent, which can be com-
pressed to the liquid state, at a pressure value ranging
from 45 to 80 bar and a temperature corresponding to the
15 saturation value.



Figure